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☞ See Advertisement on last page.

POETRY.

THE HEART.

The human heart—no mortal eye
Hath seen its springs laid bare;
A beauty and a mystery
Is all that resteth there:
In love, how silently 'twill brood
O'er feelings unconfessed;
A bird that feeds in solitude
The younglings of its nest!

Its hate is like volcanic fire!
We reck not of its wrath,
'Till bursts the lava from its ire
Around our scorching path.
Its friendship! oh, the blessed seeds
It strews in Time's dark bowers,—
That spring thro' misery's bitter weeds
To crown Life's cup with flowers!

The heart's despair—what simile
Portrays its gloom aright?
It is the hell of Memory,—
Unutterable night!
Its holiness!—a tree whose bloom
Eternity supplies,
And flocking to whose branches, come
The birds of Paradise.

In every human change, the heart,
Is but a living lyre,
Where each fierce passion plays its part,
Upon a separate wire,
But harsh and wild the tones will be,
While passion round them clings,
It never breathes true melody,
'Till God has touch'd its strings.

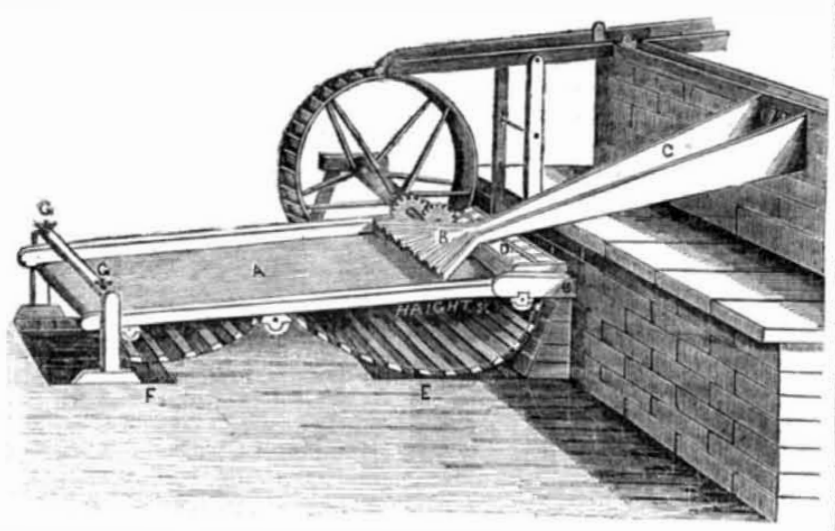
BE KIND TO EACH OTHER.

Be kind to each other!
The night's coming on,
When friend and when brother
Perchance may be gone;
Then midst our dejection,
How sweet to have earned
The blest recollection
Of kindness—returned!
When day hath departed,
And memory keeps
Her watch, broken-hearted,
Where all she loved sleeps
Let falsehood assail not,
Nor envy reprove—
Let trifles prevail not
Against those ye love!
Nor change with to-morrow,
Should fortune take wing,
But *the deeper the sorrow,*
The closer still cling!
O, be kind to each other!
The night's coming on,
When friend and when brother
Perchance may be gone!

Borrowing.

"Mother wants to know if you won't please to lend her your preserving kettle—cause as how she wants to preserve?" "We would with pleasure, boy; but the truth is the last time we loaned it to your mother, she preserved it so effectually, that we have never seen it since." "Well you need'nt be so sassy about your old kettle. Guess it was full of holes when we borrowed it, and mother would'nt a troubled you again, only we saw you bringing home a new one!"

BRUNTON'S ORE DRESSING FRAME.



As much attention is being paid to the operations of ore dressing, we take this opportunity of giving a description of a process, illustrated by the above diagram, by which a great saving is effected in the cost of dressing ores.

A is a piece of prepared canvass, 30 feet long, joined at the ends—thus forming an endless band, with slips of wood fastened transversely on the inside, and making, when stretched on frame and rollers, a surface of 12 feet long and 4 feet wide, the inclination of which is altered to suit the material to be operated on by the screws G G. B is an inclined plane, divided into several channels, in connection with the trough C, into which is placed the ore to be dressed, from which it is washed and distributed over the channel B.—D is a shoot, over which clear water runs. E a cistern, or receptacle, where the cleaned or dressed ore is deposited; and F another, into which the dirt and waste falls. By the action of the water-wheel, the endless chain belt is made to move continuously upwards against the stream; and as the work is washed on the table overhead B, where the stream is increased by the clean water, which two streams combined are sufficient to wash the waste over the end of the frame into cistern F; while the ore, by its superior gravity, resists the force of the stream, and is carried upward, being (while passing between the heads B and D) subject to the action of the stream of clean water. When the ore thus separated from the waste is carried up past the head D, it is free from all action of water, and adheres to the canvass until it touches the water in cistern E, when it directly falls off, and is deposited in the bottom of cistern E. Thus there is a continuous stream of material to be dressed passing over the inclined plane B—a continuance stream of waste going over the end of frame into cistern F—and a continuous stream of clean or dressed ore being deposited in cover E; and it is found that no other method yet adopted can either produce the same effect, both as regards the high produce of the cleaned ore, or the impoverished state of the waste, in which particular point the great saving is—as, let the person attending it be ever so negligent, no ore is being wasted, so long as the water wheel is at work; while, in the old method, there is a great quantity of ore which finds its way to the tail of the frame, through the negligence of the party using it. These frames effect a saving in labor in dressing ores of from 10 to 20 per cent.; while it is generally considered by those who have had them in use for months, that the saving in ore is of considerably greater importance than that saving in labor.

Female Curiosity.

A remarkable instance of female curiosity is given in the Paris *Semane*. A gentleman who had always lived on the happiest terms with his spouse, had the misfortune to become a freemason. On returning home, after his initiation, he was assailed by Madame G——, with anxious inquiries as to the secrets of the order; but the gentleman persisted in declaring that there "was no secret about it," and congratulated himself that, at last, her importunities had ceased. So deeply had this desire taken hold of her mind, however, that Madame G——, who is young and good looking, actually eloped a few days after with a youth who had promised to tell her the coveted secret.

Log Rolling.

"Talk about log rolling," said an old western settler who had just taken his seat in the legislature, "you know nothing about it, Mr. Speaker. When you get into the woods, wading through snow six feet deep, and roll your hickories ten miles to build a cabin, then you may talk of log rolling. The honorable members know nothing about it."

The Force of Truth.

"Yes, Mr. Chairman," said a modern political orator, "I repeat the declaration—I do not believe there is a man, woman, or child in this house, who has arrived at the age of fifty years and upwards, but has felt this truth thundering through their brains for centuries."

"Pop Corn" for a Queen.

A lady of West Newbury, Mass., lately sent *three pecks* of "nice" parched corn, and a couple of ears with explanation of the process of parching to Queen Victoria, which she being graciously pleased to accept, we no doubt shall soon hear of a shingle being hung out in London, announcing that some Salathiel Slick or other has had the honor to be appointed "Pop Corn Maker to Her Majesty, Prince Albert, and the Royal Family."

A Hard Head.

Major Sumner, who led the Rifles in the battle of Cerro Gordo was struck on the head by a musket bullet. The bullet was flattened to the thinness of a dime, and retained on its surface the print of the Major's hair, and yet, strange to say, excepting the severance of an artery, he sustained no serious injury. The Major may certainly felicitate himself on the strength of his craniological defences.

Tit for Tat.

The doctors in Connecticut are trying to induce the Legislature to pass a law that no patent or quack medicines shall be sold in that State without a label giving all the ingredients of which it is composed. To be even with them, the medicine men have asked the Legislature to pass a law that all physicians' prescriptions shall be written in plain English.—Between the two, it is thought there will be some fun.

LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending May 29th, 1847.

To Richard J. Gatling of Murfreesboro', N. C., for improvement in Shovel Ploughs. Patented May 29, 1847.

To William S. Cooke, of East Fairfield, Ohio, for improvement in the reduction of Iron Ores. Patented May 29, 1847.

To John M. and Benj. B. Brown, of Marit's P. O., Ohio, for improvement in Grain and Hay Rakes. Patented May 29, 1847.

To George Riley, of New York, for improvement in Distilling. Patented May 29, 1847.

To Abner H. Pinney, of Columbus, Ohio, for improvement in machinery for Jointing Staves. Patented May 29, 1847.

To Riley Smith, of Towanda, Pa., for improvement in Cotton Presses. Patented May 29, 1847.

To William H. Bayless, New York, for improvement in Distilling. Patented May 29, 1847.

DESIGNS.

To John C. Moore, of New York, for design for Spoons. Patented May 29, 1847.

Ready made Sermons.

In England some persons are constantly employed in writing sermons to sell to clergymen. The following advertisement appeared in a late number of the John Bull:—

"Many young ministers, from press of parochial business, and from inexperience in composition, being sometimes obliged, very much against their inclination, and to the serious injury of their ministry, to copy sermons from books, the advertiser, an experienced clergyman, engages to supply original sermons, of good composition, of decidedly Evangelical doctrine, and of practical application, on the receipt of half a sovereign ($2,50) each. Persons requiring sermons may choose their own texts, and need not disclose their names, as the sermons can be directed to a fictitious signature, at any post office they are required to be sent to!"

This systematization of the business must be a decided improvement inasmuch as the poor and humble class are invariably better qualified to make good sermons than the opulent.

Blue Tea.

Some startling disclosures have been made in England in regard to tea. Sir George Larpent, the Chairman of the East India Association, stated in his evidence before Parliament, that "the whole of the supply of tea for the European market was a *manufactured article*. There was not a pound of tea which came to this country from China which did not undergo a coloring process Tea which we called green here was colored green, and might as well be colored yellow or blue. The tea underwent that manufacture with the view to adapt it to the market in this country, and the process might to some extent alter the essential quality of the tea."

Abstract Science in War.

The Newtonian theory of tides was put to a practical test in the blockade of the Texel, on a system at once economical in anxiety and labor, by the English, in their last war with the Dutch. The ports of Holland admit of the ingress and egress of large ships only during spring tides; two days before which the English squadron took its station off the Texel, and remained there only so many days after the full change of the moon: so that the Dutch lost all the advantages of high tides, and their heavy ships were effectually detained in their harbors.

Troubles are like hornets—the less ado you make about them the better—for your outcry will only bring out the whole swarm upon you.

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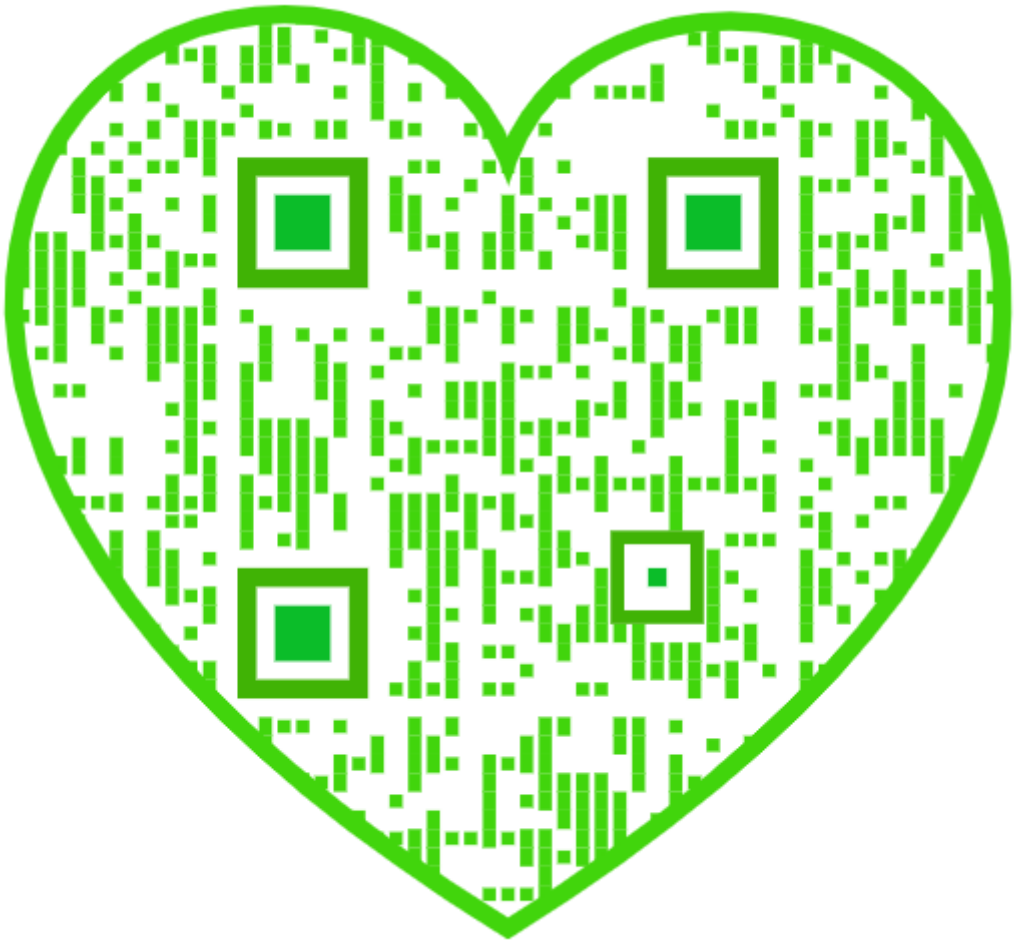

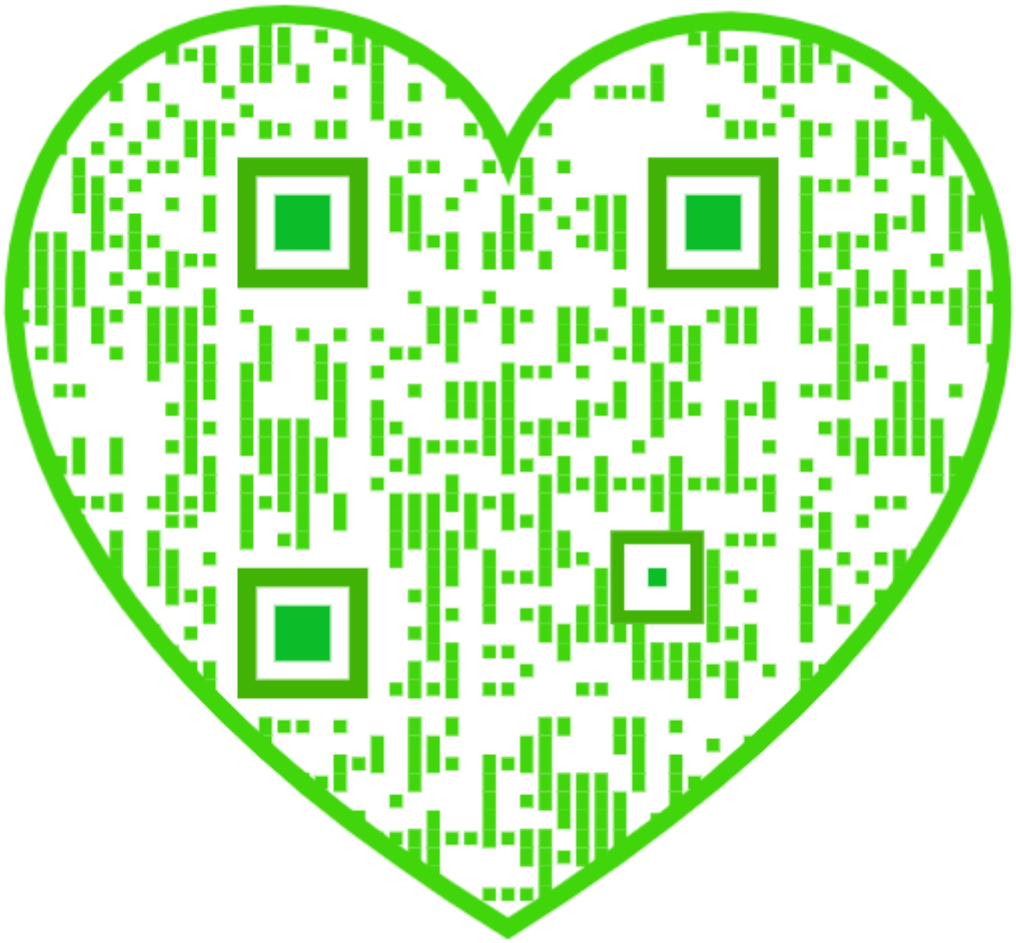

Value of Knowledge.

A new article has of late been discovered in Maine, called the "American Metallic Lustre,' which seems to be unequalled for cleaning and polishing metals. Its discovery was in this wise: A young man from Boston, who had paid considerable attention to geology and chemistry, was travelling for the purpose of obtaining subscribers to a newspaper, when passing through the town of Newfield, he noticed some bricks of very peculiar color. He traced up the bricks to their clay bed, and purchased the farm on which it was situated, for which he paid fifteen hundred dollars, went to Boston, and sold half of it for four thousand dollars.

Milwaukie River.

This is a beautiful stream, and the largest which empties into Lake Michigan on its western shore, and not only affords near its mouth and for three miles up its channel, a spacious and commodious harbor, but also furnishes a most extensive and valuable water power, which by means of a canal is brought into the midst of the city, giving employment to a numerous and industrious population. About a mile above the city, a dam is erected across the river, of magnificent dimensions, and great permanency of plan and workmanship. It is four hundred and eighty feet long, and eighteen feet high, from which the water is conveyed through a guard lock into the canal and through this to that part of the city where the power is made available to the propulsion of machinery.

Temperance in England.

The London correspondent of the National Intelligencer, says that notwithstanding the immense exertions of the temperance societies in England, the consumption of brandy in 1846 was 500,000 gallons more than in 1845. The duty upon foreign spirits was reduced 7s. 6d. per gallon, in 1846; and, although the low duties have been in operation only *eight months*, yet the increased consumption of brandy and gin has, during that period, been such as to make the revenue from its importation greater than in 1845. The total increase of consumption of rum, brandy, gin and British made spirits in the last four years is given at 6,308,375 gallons.

State Bank at Elizabeth, N. J.

What's the matter with this Bank? The papers are beginning to talk about it. It appears that after draining its vaults of every dollar in specie there still remains the enormous sum of $419,517.60 against the Bank. Among the assets to meet this are notes of the old Belville Bank, broken long ago. For our own part we have but little confidence in any of the New Jersey Banks since the downfall of the Plainfield, and would'nt keep a dollar of them over night.

Expected Return of the Comet of 1556.

As long since as 1751, Mr. Richard Dunhorne, of Cambridge, on computing the course of the comet of 1556, said he was led to the conclusion that the two were identical, and that its return might be expected about 1848. Subsequent investigations confirm this conclusion —and there is, therefore, good reason to look for the re-appearance of this comet during the year 1848.

The Weather and the Crops.

The Jacksonville News, of the 14th instant says: From all quarters of East Florida we receive the most gratifying accounts of the state of the crops. The copious showers which have recently fallen have been of incalculable advantage to the farmer, and an abundant harvest is firmly counted upon by all.

Spontaneous Combustion.

We have accounts of the loss by fire, occasioned by spontaneous combustion, of the brig Canning, at Port Famine. She was laden with nitrate of soda. The layers of bags which contained the soda, on being reached by the fire, exploded in succession with reports resembling the discharge of artillery.

Vitriolic River.

Although sulphur is found to exist more or less in the vicinity of every volcano, the only instance of sulphuric acid being found in a state of nature, is in the island of Java, near Batavia, the capital. A lake of sulphuric acid occupies the crater of an extinct volcano, from which reservoir it flows in a rivulet down the sides of the mountain to a considerable distance. During the dry season of the year, this remarkable stream becomes absorbed by the thirsty arenaceous soil through which it runs; but in the rainy season it forms a confluence with another stream, called the White River. The water of the latter though saturated with a whitish clay, is not pernicious, far less fatal, either to fish or other animals. But the moment it is joined by the acid rivulet, the stream becomes transparent from the acid precipitating the earthy matter which it holds in solution; and it destroys not only the fish, but also the whole of the vegetation over which it passes.

Capture of Slavers.

The St. Helena Gazette of April 10, mentions the arrival there of H. M. steam frigate Penelope. This vessel has had the good fortune to capture three prizes since the 20th of March; one of them having 320 negroes on board, and another of the three was captured the afternoon before her arrival at St. Helena.

Rail Road Accident.

On Friday last, while the locomotive and train was on passage from Owego to Ithaca, they broke through a bridge at a spot called "Woodbridge's," six miles from Owego, and instantly killed D. C. Hatch, of Ithaca, Engineer, and A. Dickinson, of Danby, fireman. The bridge had been for some time considered unsafe.

Iron Seats and Settees.

Messrs. Wallace, Lithgow, & Co., of Louisville, have recently commenced the manufacture of cast-iron seats and settees. They are light and beautiful, admirable for open grounds and porches.

Using up Materials.

The materials already used in building the new House of Parliament in London, include eight to nine hundred thousand tons of stone, *twenty four millions* of bricks, and *five* thousand tons of iron. So says an English paper.

Marine Losses.

By a list in the Portland Advertiser it appears that the vessels lost belonging to that collection district since January, 1846, have been 6 ships, 6 barks, 22 brigs and 5 schooners, amounting in the aggregate to 9000 and 44-92ths tons.

Declension of Crime in Connecticut.

The present number of convicts in the state prison is 150; ten years ago, 216 were there confined. The Directors attribute this cheering change to the great diminution of intemperance in the State.

Telegraph West.

A Pittsburgh paper of Saturday last states that the line from that city west will be commenced in a few days. It appears that contracts have been authorized from Pittsburgh to Cleveland, and from Pittsburgh to Louisville.

Fifty Miles of Canal Boats!

About 1000 new canal boats are estimated to have been added to the New York Canals the present season, making with those previously registered, say 3,500. These at 80 feet in length to each, would make a line of boats over 53 miles in length!

Gasometer.

The corporation of Manchester England, are preparing to erect another huge gasometer, to hold 200,000 cubic feet, and if made on the telescope plan, it will contain 400,000 cubic feet of gas.

Work for Immigrants.

The contractors on the New York and Erie Railroad offer $1 per day and a free passage, to efficient laborers for that work. Very few of the immigrants should want, while such offers are made to them.

Guano.

It is stated by a writer in the London Nautical Magazine that the Chincha Islands alone can furnish *fifty thousand tons* of guano a year, for *one thousand years*.

Mammoth Printing Presses.

Messrs. Hoe & Co., are making two huge Printing Presses for the New York Sun. The types are placed upon a cylinder 4 feet in diameter, and the inking apparatus is of a novel description. All the motion is rotary, and it is calculated that in the saving of friction, and wear and tear by such means, the great amount of from five to twenty thousand dollars expense per annum will be avoided. It is calculated that these presses will be able to throw off 30,000 copies per hour. Their cost will be twenty thousand dollars. The circulation of the Sun is more than 50,000, and heretofore they have been unable to supply copies as early as required, but with their improved presses, the first in the city, they will effect a complete revolution in newspaper printing.

Interesting Discoveries in Asia.

Letters from Mosul, state that M. Layard, in continuing his researches at Nimrod, near Mosul, where he had already discovered some very fine bas-reliefs and a collossal lion, has since found a great many small bronze lions, some female ornaments for the neck, a copper helmet, a great variety of smaller articles in gold and silver, two hollow columns of great beauty, and a quadrangular pillar of a black material resembling porphyry, highly polished, and covered with inscriptions and designs. All these new discoveries are said to be in good preservation.

Try it by all Means!

A writer in a London paper has matured a plan by which he proposes in future to avoid railway collisions. He advises that an iron chair be constructed directly in front of the locomotive, and that one of the Directors should sit therein, on every trip. He thinks this "patent railway buffer" will effect the desired object.

Cause of Insanity.

The Physician of the Pennsylvania Insane Asylum has reported that among the 936 patients, there were two insane for the dread of poverty; fright 14; religious excitement 14; political excitement 3; metaphysical speculation 1; want of exercise 1; engagement in a duel 9; want of employment 18; mortified pride 1; anxiety for wealth 1; use of tobacco 2; tight lacing 1, &c. &c.

Economy of Candles.

If you would burn a candle all night, place as much common salt, finely powdered, as will reach from the tallow to the bottom of the black part of the wick of a partly burned candle, when if the same be lit, it will burn very slowly, yielding a sufficient light for a bedchamber, the salt gradually sinking as the tallow is consumed, and the melted tallow being drawn through the salt and consumed in the wick.—*Economist.*

Peat Fuel.

In consequence of the high price of coals in Ireland, experiments are being instituted on board the war steamer Rhadamanthus, now on the Irish coast, as to the use of turf, and hitherto they have been favorable to the substitution. If used in the proportion of two tons for one of coal, turf has been found to answer well.

Electric Discovery.

A Belgian savant says he has just discovered that electric light directed on the human body, makes it so diaphonous as to enable the arteries, veins and nerves, to be seen at work, and their action to be studied.

Where shall the Hero Rest?

There arrived at Hull, England, not long since, a Dutch vessel navigated by a man, his wife, and four daughters, laden with bones, raked from the battlefields of Napoleon, to be retailed by the bushel for *manure to grow turnips!*

The Great Britain.

There is now a probability of the *Great Britain* steamer being got off. The ship has been made water tight in her forehold, and floated several feet forward on the last spring tides.

Imperfect Ventilation.

Imperfect ventilation compels each individual to administer to himself a slow poison.

The receipts for tolls on the Erie Canal both ways, during the week ending 22d instant, amounted to $166,103.

LATEST FROM EUROPE.

Since our last, dates from Liverpool, to the 8th May, have been received by an arrival at this port.

Grain was still advancing, but cotton had declined. There has been a great civil war in China, and one hundred and fifty thousand persons had been killed and wounded.

Food riots were common throughout all Europe. Through the intervention of the English Government, the Portuguese civil war is ended.

Accounts from the East, bring the appaling intelligence that the murderous Bederhan Bey was still persecuting the helpless Nestorians, men, women, and children were impaled by him amid the jeers of his ruthless followers.

LATE FROM MEXICO.

Gen Worth entered the city of Puebla on the 16th of May without opposition. Santa Anna was prowling around the neighborhood with considerable force. Reinforcements of light cavalry are on their way to the army of Mexico, and with them our Generals will be enabled effectually to keep up the lines of communication and destroy the effect of the Mexican Guerilla system.

Great Steamboat Race.

One of the most animated steam boat races that ever took place in this country, was witnessed on Tuesday, on the broad bosom of the Hudson, between the splendid steamers Oregon and Vanderbilt. The race was from the Battery to Sing Sing and back, which was accomplished by the Oregon in three hours and fifteen minutes, being at the wonderful speed of twenty-four miles an hour. The race was to decide a bet of one thousand dollars, which the Oregon won by about three-fourths of a mile. The Vanderbilt proved herself to be a superlative boat. She is newly built and when her machinery gets smoothed with a few trips, she will be unsurpassed by any other craft that " walks the waters."

Glass Milk Pans.

The New York Farmer's Club are about to offer a premium for the best manufacture of glass milk pans for dairies, the pans to be 16 inches wide at the top and 12 inches at the bottom.

Preservation of Books.

The New York Historical Society is about to expend fifty thousand dollars for the erection of fire proof buildings for the preservation of their collections.

A Cotton Gin for Russia.

The Madison (Ga.) Miscellany understands that a firm in that county have received an order from the Russia Consul, at Savannah, for one of their superior cotton gins, which is to be sent direct to the Emperor of Russia.

A book has just been published to prove that "beardshaving and the common use of the razor constitute an unnatural, irrational, unmanly, ungodly, and fatal fashion among Christains."

The Mormons who emigrated to California have had a falling out which has resulted in their complete dispersion over the entire territory.

A recent number of the "London Times," contains no less than *two hundred and ninety seven* advertisements of persons in want of employment.

The Albany Statesman learns that there are no less than sixty patients now in the hospital of our Alms House, sick with the ship fever. It proves fatal in a large portion of cases.

The authorities of Charleston, S. C. are preparing to sink an Artesian Well, with a view to procure an abundant supply of pure water.

Four hundred boys are now engaged at the Arsenal at Watervliet, near Albany, in the preparation of ball cartridges for the army.

Messrs. Corcoran & Riggs, of Washington, have sent $5000 to the Irish Relief Committee of this city.

A dreadful explosion took place on Wednesday from Fire Damp, in the Collieries of Rogers, Sinnickson & Co. at Pottsville.

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SONG OF SUMMER.

Summer winds have come,
Through the forest flying;
Green leaves wake in bloom,
Where their breaths are sighing.
Streamlets leap in glee
Down the mountains brightly,
From winter's fetters free,
The glad waves laughing lightly,
Leave our winter bowers;
For o'er leaf and fountain,
Over dale and mountain,
Smiles the moon of flowers

Warrior! from its sleep
Bid the spear awaken;
Let thy dark plume sweep,
On the free winds shaken!
Hunters! grasp the bow,
And, o'er wide plains sweeping
Rust where wild deer now
Unpursued are leaping!
Past are winter hours;
And o'er leaf and fountain,
Over vale and mountain,
Smiles the moon of flowers.

Maiden! hie the forth,
Joyous sounds are swelling
O'er each young leaf's birth,
In thy summer dwelling;
Bind thy fair young brow—
Deck thy shining tresses—
Breeze and floweret now,
Woo thee with caresses!
Leave thy winter bowers;
While o'er leaf and fountain,
Over vale and mountain,
Smiles the moon of flowers.

Formation of Rocks.

Some of the most curious philosophical experiments of the present age have consisted in imitations, on a small scale, of operations, which nature carries on upon a very grand one. A popular view of some of these cannot fail to prove interesting. We shall commence with the celebrated experiments of the late Sir James Hall, respecting the formation of limestone.

Limestone is a rock found in great abundance throughout the crust of the earth. Marble, chalk, and calcareous spar, are modifications of it. Dr. Black ascertained that the process, so familiar to us all, of burning limestone, and thus making the *quick lime* used in building and for agricultural purposes, is simply a discharging, from the original stone, of carbonic acid, which goes off in a gaseous form. Limestone he therefore made out to be the *carbonate* of lime. It was some time after, propounded by Dr. Hutton, the geologist, that limestone, in its various modifications, had been formed under the influence of the heat which he assumed to exist in the interior of the earth, while a pressure of superincumbent materials prevented the carbonic acid from flying off. This was an ingenious idea, but deficient in positive proof. The object of Sir James Hall, who was a supporter of Dr. Hutton's theory of the earth, was to subject it to the test of experiment.

He commenced his experiments in 1798, at his country house of Dunglass, in Berwickshire. He took a common gun-barrel, and charging it with a quantity of chalk, or pulverized limestone, filled it up with brick-dust, and closed the muzzle by welding its lips together. He then introduced the breech into a furnace, heated to twenty-five degrees of Wedgwood's pyrometer. Many barrels, thus treated, gave way, but in others, at the conclusion of the experiment, the chalk was found *agglutinated into a stony mass*, which required the smart blow of a hammer to break it, and felt under the knife like common limestone. He afterwards changed the gun barrels for porcelain vessels prepared on purpose, and used fusible metal for ramming, instead of brick dust. He also took many ingenious expedients for ascertaining how much carbonic acid made its escape during the operation.—When an escape to the amount of twenty per cent. took place, the contents had no appearance of stony matter; but when it was about three or four per cent., the stony character was perfect. Ultimately, by allowing a little aqueous vapour to remain in the barrel, in order to counteract the expansion of the fusible metal, he succeeded in reducing the proportion of escaped gas to about a quarter of a per cent. The pounded chalk was then brought into the condition of *saline marble*, accompanied with crystallization and other marks of fusion. One specimen formed from pounded spar was so complete as to deceive one of Sir James' workmen, who remarked that, if the marble were a little whiter, the quarry from which it was taken would be very valuable. This particular specimen afterwards fell into dust, but many other pieces, the produce of the Dunglass laboratory, resisted the air and kept their polish for years; nor do we know that these are yet otherwise than in the condition of marble. By calculations, which cannot well be explained here, Sir James concluded that a layer of the carbonate of lime, at the bottom of a sea 1700 feet deep, would, if a due degree of heat were applied, be formed into limestone; and into a complete marble, if the depth of the sea were 3000 feet; the pressure being in the one case as 52, and in the other as 86 atmospheres Sir James spent seven years in his experiments, which were a hundred and fifty-six in number, and he showed in them a degree of patience, care, and philosophic ingenuity, which excited universal admiration when the result was published by the Royal Society of Edinburgh in 1806. He was considered as having proved—not exactly that our beds of limestone and marble were formed by heat under a pressure confining the carbonic acid, for nature *might* have other ways of bringing about the end, but that such at least was a mode in which the effects could be bro't about. The probability that such were really the circumstances under which the strata in question were formed, is so great, that practically such is the doctrine as to their formation held by the philosophical world.

(*To be continued.*)

Great Results from Small Beginnings.

The possibility of a great change being introduced by very trifling and slight beginnings may be illustrated by the tale which Lockman tells of a vizier, who, having offended his master, was condemned to perpetual captivity in a lofty tower. At night his wife came to weep before his window. "Cease your grief," said the savage, "go home for the present, and return hither when you have procured a live black beetle, together with a little ghee, or buffalo's butter, three clews, one of the finest silk, another stout pack-thread, and another of whip cord, finally a stout coil of rope. When she again came to the foot of the tower, provided according to her husbands' commands, he directed her to touch the head of the insect with a little ghee, to tie one end of the silk thread around him, and to place the reptile on the wall of the tower. Seduced by the smell of the butter, which he conceived to be in store somewhere above him, the beetle continued to ascend till he reached the top, and thus put the vizier in possession of the silk thread, by which he drew up the pack-thread, and by means of the cord a stout rope capable of sustaining his own weight, and so at last escaped from the place of duresse.

Productiveness and nurture of the Silk-Worm.

The time that elapses while the worm is undergoing its changes varies according to the state of the weather and the quantity of nourishment with which it is supplied. The Chinese are most particular on this head, as on this depends the quantity of silk which the worm will produce. The Chinese calculate that the same number of insects which would if they attained their full size in twenty-five days, produce twenty-five ounces of silk, would only yield twenty ounces, if their growth occupied thirty days, and only ten ounces if forty days. During the first twenty four hours of its existence, the Chinese feed it every half hour, or forty-eight times; the second day, 30 times; and so on, reducing the meals as the worm grows.

Drunkenness.

In Queen Anne's time drunkenness was rather popular than otherwise. In the manuscripts of the British Museum, there is a letter from the private Secretary of the celebrated Dutchess of Marlborough, addressed to the Pope, which began thus, "Sir, my lady the Dutchess being drunk, was unable to see you when you called yesterday." Temperance Societies were unknown in those days.

THE WEATHER, &c.

WEDNESDAY, MAY 26th.

	Hours, A. M.									Hours, P. M.									
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
Therm.	62	62	63	67	66	71	72½	72	73½	73	75	71	69	68½	68	66½	63	62	60½
Wires,	62	62	63	67	67	72	72½	72	73½	73	75	71	69	68½	68	66	64	62	61
THURSDAY, 27th.																			
Therm.	53	54	55	56	58	60	62	64	65½	67½	67	67	66	65½	63	61	58	57	56½
Wires,	53	54	55	56	58	60	62	64½	66	68	67	67	66	65½	63	61	59	57	57
FRIDAY, 28th																			
Therm.	52	53	54	59	65	68	70	72	74½	76	78	78	75½	71	69	67	65	64	—
Wires,	52½	54	55	60	66½	70½	73	73	75½	77	79	79	76	72	70	68	67	65	—
SATURDAY, 29th.																			
Therm.	60	60	61	65	70	75	78	80	82	84	85½	86	85	82	79	77	74½	72½	71
Wires,	61	61	62	66	71	77	80	81	82	84	86	87	86	83	80	78	76	73½	71½
SUNDAY, 30th.																			
Therm.	—	62	67	63	62	60	58	56	55	55	52	53	54	53½	54	53	53	52½	53*
Wires,	—	62	68	63	62	59½	57	55	54*	55	52	53	54	53*	54	53	53	53½	52½
Slight vibrations and fluctuations from equilibrium.																			
MONDAY, 31st.																			
Therm	49	49	50	52	54	55	56	55	54	53½	53	53	53	52½	52	52	52	52½	52½
Wires,	49	49	50	52	54	55	56	55	54	53½	53	53	53	53	52½	52½	52½	53½	53½
Slight vibrations and fluctuations from equilibriation.																			
TUESDAY, June 1st.																			
Therm.	54	54	54	55½	56	58	61	66	67½	71	71	74	73½	70	67½	68	65	64½	64½
Wires,	55	55	55	56½	58	59	62	66½	68	72	72	75	75	71½	69	69½	67	66½	66½

(**Wires lower than Thermometer.*)

REMARKS.

26th, sprinkle of rain at 8 and at 11 A. M. 27th, bright red clouds in the north at 4½ A. M., blue clouds in the S. W., clear overhead but in a few minutes the atmosphere overhead suddenly became opaque. 29th, at 30 minutes past 3 P. M., thermometer 88, wires 88; at 11 P. M., net work clouds overhead. 30th, cloud in the North and S. W. at 5 A. M., rain at 11 A. M, and 2 P. M.; change of temperature in 22 hours, 36 degrees. 31st, clouds S. W. and North at 4 A. M. The struggles at equilibriation the afternoon of Sunday and Monday are well marked and indicate a distant disturbance June 1 From 15 minutes past 5 A. M. to 14 minutes to 6, there were 12 electric discharges from the clouds, three of which were of a blood red color.

E. MERIAM.

Brooklyn Heights, June 1, 1847.

Volcanoes and Earthquakes.

The New York Sun of May 28th contains the following:

"*Volcanic Eruption.*—The Brig Deposit arrived at Boston on Tuesday from Porto Praya, 2d inst., the Captain of which reports that the volcano on the Island of Fuego, one of the Cape de Verds, commenced burning on the evening of the 9th ult., (April) and continued 8 days, during which the blaze was distinctly seen at Port Praya, distant 50 miles. On the evening of the 11th, there was a slight shock of an earthquake felt at Port Praya, and tremblings were felt at intervals during the remaining six days. The smoke was still rising from the crater on the2nd inst."

The Scientific American of April 17th contains a memorandum of my meteorological records for one week, commencing with Wednesday, April 7th, and ending with Tuesday the 13th, by which it will be seen that an *Equilibrium* registered by my wires, commencing with the wires at 58 at 8 o'clock on the evening of the 8th, and ending with the wires at 58 at 7 o'clock on the morning of the 9th, lasting 11 hours—thus it preceded the convulsion of the volcano and the accuracy of the indication of the wires is confirmed.

In the "Remarks" following the table of figures is the following:

"REMARKS. April 7. Dark clouds in motion from 9 A. M. to 1 P. M., preceded by a rapid rise in the wires. In the evening the Aurora Borealis was very brilliant, and was seen over a great surface. I have accounts from Washington City, Baltimore, Philadelphia, and Albany, at each of which places the light was very bright. The wires it will be seen fell rapidly, and in all 10°, thermometer fell 13° during the same time. April 8. Rain commenced falling before midnight, and continued until 5 A. M. of the 9th with a slight variation both in wires and thermometer. April 11th, Equilibrium commenced with the thermometer and continued till the morning of the 12th, during which time the wires rose two and a half degrees. In the evening very vivid lightning in the north east, great depression in the wires during the night, being 19½ degs. from sun set to sun rise, during the same time the thermometer fell 19 degrees—sprinkling of snow at 9 A. M.

Brooklyn, April 13, 1847. *E. M.*"

Thus it will be seen that this record of observations made simultaneously with the convulsions shows conclusively that these observations are most accurate and the indications well made by both the wires and the thermometer.

Cape de Verd Islands are about 250 miles from the west coast of Africa and situate between north Lat. 14.20 and 17.20—and west Long. 22.20 and 25.30. There is no land between these Islands and Long Island, on the south western pole of the latter is my place of observation

E. MERIAM.

Brooklyn Heights, May 29, 1847.

Intoxication from Food.

Dr. Thompson, a practitioner of Glasgow, who has lately published some medical work or other, records several instances of a fact which he considers extraordinary, and which he does not undertake to explain. The fact is the *intoxication* produced by food after long abstinence, and also by animal food in those accustomed to a vegetable diet only. The first case mentioned is that of Captain Bligh and his boat's crew, who went from Otaheite to New Holland in an open boat, a distance of nearly four thousand miles, after having been driven from their ship by a mutinous portion of the crew Captain Bligh had been sent to Otaheite by the British government in 1794, if we remember correctly, to transport bread fruit trees to Jamaica, an experiment that failed; and while at Otaheite, he and the faithful portion of the ship's company were overpowered by the mutineers, and turned adrift in an open boat. By great exertions, and the most rigid economy in their small stock of provisions, they reached New Holland, almost dying with hunger. Finding some oysters on the beach they ate heartily of them, and became quite intoxicated, supposing themselves poisoned.—The doctor mentions several other cases of intoxication after long abstinence He also says that while an army surgeon in India, he obtained some extra service of some Hindoo soldiers, by promising them a ram for dinner, an acceptable present to them, who rarely tasted animal food. The mutton being roasted, and greedily devoured by them, produced all the symptoms of intoxication, putting some to sleep, making others stagger, and others talk excessively, and play the usual pranks of ebriety.

Sir Isaac Newton.

This illustrious philosopher and mathematician was born in 1642, and died in 1727. At the age of 18 he entered Trinity College, Cambridge, Eng., and there he began to show the astonishing strength of his mind. At the age of 22 he discovered the method of fluxions, which he afterwards greatly improved. His next pursuit was the grinding of optical glasses, for the improvement of telescopes, and soon after, followed his new theory of light and colors. His greatest discovery, and the greatest the world ever saw, viz: the principles of gravitation, next succeeded. His person was of a middle stature, and his countenance tho' venerable and pleasant, did not indicate transcendent sagacity which he was known to have possessed.

Wealth of New York.

It is estimated that the products, manufactures, &c., of all kinds, in the State of New York, yield an annual income to the people of the State of $300,000,000.

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NEW INVENTIONS.

Improved Corn Sheller.

Mr. Isaac A. Hedges, of St Louis, Missouri has invented and put in operation there, a new corn shelling machine. The Editor of the St. Louis Republican who saw one of them in operation says that "it occupies very little space, not much more than a barrel churn—is simple in its construction, and can be worked by hand or machinery. It will shell sixty or seventy-five bushels from the cob, per hour, according to the power applied; and on Saturday, with a man to turn the cylinder, one bushel was shelled in fifty seconds. The principle is that of a revolving cylinder, surrounded with bars resting on spiral springs, leaving a space for the corn to pass, the whole neatly enclosed in a sheet iron cylinder. The width of the space being regulated by the springs, ears of corn of all sizes being thrown in the hopper together, are all completely shelled, even to the small grains on the ends of the cobs. Below, where the shelled corn comes out, is fixed a fan, which winnows it perfectly clean, and it then falls into bags hooked beneath to receive it, and is ready for the market. If worked by steam, it requires the attention of two men, one to feed it, the other to fix on and remove the bags.—They can thus shell and get ready for the market, from eight hundred to one thousand bushels per day. It is equally good in shelling white and castor beans, which, thrown into the hopper, vines and all, the beans are shelled and fall into the bag clean and ready for market."

New Screw Cutting Machine.

A plan of cutting iron screws, has been invented by P. W. Gates, Esq. of Chicago, Illinois, by which the power of one man will cut per day, 700 half-inch, 500 three-quarter inch, 400 one inch and 300 one and a half inch bolts. The advantages claimed for this plan over the common die, are its despatch in doing work; its durability, having cut over 4000 bolts with one die, without any repairs; instead of jamming or driving the thread into shape it cuts it out, the same as in a lathe, leaving the thread of solid iron, which cannot be stripped off as is usual with those cut by the common die, and it will do the work by once passing along the bolt, making the thread perfect. The die, *it is said*, can be made by ordinary workmen, with far less expense than the common die, and when made, is not at all liable to get out of repair.

Reversing Water Wheel.

An improvement has been made by Mr. C. Richardson, of London, in an overshot water wheel, by making the wheel to reverse in the same manner as a steam engine, and superseding the old method of reversing gearing.—The wheel is broader than the old kind and divided into two equal portions by a division down the centre. Each division has its buckets set in a contrary direction from the other, and the water course so arranged, that the current may be directed into either set of buckets by a suitable shut off valve. The delivery channel is divided into two courses to suit each side of the wheel, each channel being set on the opposite side of the periphery. To reverse the machinery, the water is simply shut off the one side of the channel and directed to the other. The time required to stop the wheel is no more than amounts to half a revolution, when it immediately commences to revolve in an opposite direction.

Palmer's Patent Premium Leg.

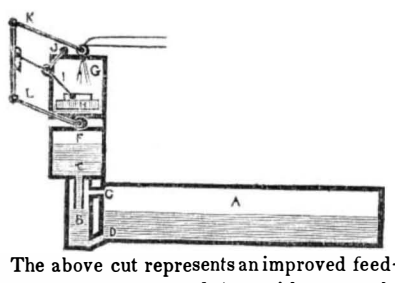
This invention of Mr. Palmer, so ingenious and beautiful, far surpasses the old Angelsey Leg, so famous in story. Its mechanical contrivance is perfect. Those who use them can not be detected for lameness. It is highly recommended by no less eminent men than Valentine Mott, M. D., New York, and Dr. Goddard of the University of Pennsylvania.

They are made by Mr. Palmer, at Meredith, New Hampshire.

Patent Life Boats.

The Washington Steamer has five Galvanized Metallic Life Boats, invented and patented by Mr. Joseph Francis, and made by machinery at the Novelty Works in this city.—They have been tested and found to possess great strength combined with lightness, possessing the qualities of safety and speed.

Novel Boiler Feeder.



The above cut represents an improved feeding apparatus for supplying with water the boilers of stationary high pressure engines. A is the boiler, B is a cylinder which communicates with the boiler by means of the steam-pipe C and water pipe D, and contains water standing at the same height as that in the boiler, and not liable to foam. E is a pipe the upper end of which communicates with the reservoir F, and the lower descends to the water line. As soon as the water in A and B gets below the end of this pipe, steam ascends through it into the reservoir, and water descends until the boiler is filled up to the level with the end of the pipe. G is another reservoir containing a float and furnished with stop-cocks at the top and bottom. These stopcocks are connected and turn together, so that one shall be open and the other shut. Let us suppose the lower one closed and a stream of water flowing in through the upper float, H will rise carrying with it the lever I (which is attached to a rod extending into the reservoir through a stuffing box) and the ball J until the ball has passed a perpendicular line over the rod when it falls by its weight, carrying with it the lever H, which shuts the upper valve, and L which opens the lower. The ball is attached to the rod by means of a loose joint outside of the reservoir, and when it falls after moving the valves, its descent is arrested by a pin in the rod. After the lower valve is opened the water passes from the upper into the lower reservoir, and the float descends until the lower valve is closed and the upper one opened again. This apparatus works at all times,—it makes no difference whether the boiler is hot or cold,—and with less expenditure of power than many others with which we are acquainted. Elisha Ayer, of Norwich, Ct, is the inventor of the above apparatus.

Oblique Paddle-Wheel.

A London paper gives the following description of an oblique paddle-wheel, the invention of Mr. B. Biram, of Wentworth.

These paddles, instead of being fixed parallel with a line, drawn from stern to stern, form an angle of about 30° with such line—while the floats are fixed on the wheels in such oblique direction, that they revolve at right angles with such direct line—thus entering the water much nearer the centre of the boat than that at which they leave it, and the water is by this means thrown off in much larger eddies, each paddle ejecting it in its wake in a stream quite independent of the succeeding paddle. The power may be applied by means of bevel geer, attached to a shaft, in the position of the ordinary paddle-wheel shaft, by which, motion could be communicated to the shafts of these paddles—there is, in fact, no practical difficulty in applying the power, which admits of a variety of arrangements. When the wheel is in motion, the water is thrown off from it obliquely, which, as it is fixed, would be to the rear of the vessel's path; each float, as we have before stated, acting in undisturbed water—the water being thrown off obliquely, and not lifted by the floats—admits of deeper submersion in the water, whereby as great an area of propelling surface is obtained as in the ordinary paddle, with a much greater resistance to the floats by the water; the entrance and emerging of the floats is as near feather-edge as possible. In the ordinary paddle, the depth of immersion could not greatly exceed one-eighth of the diameter, without increasing the load upon the engines more than commensurate with any additional useful effect—so that the area of resting surface presented to the action of the common paddle, may be said to be about an eighth of the diameter, multiplied by the breadth, and not the area, of each submerged float, as each acts in the same plane, merely maintaining the impulse given by any one of them at the point of most useful effect. On the contrary, the oblique propeller floats, are constantly in different planes, and against undisturbed water.

Patent Hydro-Pneumatic Pump.

A patent has been obtained by Mr. C. Tetley, of Bradford, Yorkshire, England, for a machine for raising water on an entire new principle, by which it is stated, that a greater amount can be lifted than by any of the present known methods; the principle is simply on the basis of the natural law, that a body of compressed air, acting on the surface of a column of water in the short end of a bent tube, will raise such column to a height proportionate to the density of the air so compressed. A description of the apparatus is as follows:—A case, or chest, resembling a cheese, is fixed vertically in the water to be raised, with the water-mark above its centre, in the bottom of which is inserted the short bent end of a tube, of the necessary diameter, the other end of which is carried up to the spot where the water is to be delivered; within this case is a hollow axle running through its centre, open at the ends to freely admit the water, and having at its centre six or eight hollow arms terminating in leather tubes, so constructed, that when the pressure of the water is off them, they close so as to not admit air, but when each tube becomes perpendicular, with its mouth downwards, it immediately delivers the water into the iron case. On commencing to work this machine, an air-pump is placed in connection with the upper part of the case, and the air therein compressed to any density necessary to carry the water to a given height. The constant compression of this air will, without continuously working the air-pump, keep the water overflowing the necessary elevation; the hollow wheel being kept in rapid rotation, the water is carried through the hollow axle, and, by centrifugal force, is ejected into the lower part of the case, in which the compressed air keeps the water at one level, and, consequently, whatever quantity may flow through the wheel, will be forced up the tube in a continual stream.

Smoke Consumer.

A patent has been obtained by Mr. Lord, of Chester, England, for an ingenious application of two furnaces or sets of fire-bars to one boiler for steam engines or other purposes, whereby the gases from the fuel freshly applied to one grate pass over the incandescent coke on the other, and the entire carbonaceous matters are thereby consumed. The application of these is directed in such a manner that the entire heat is applied to the whole of the boiler, although but one furnace is at a glowing heat. To effect this, the boiler is provided with a water space about the centre, extending across the upper half of the flue, and forming a bridge to direct the course of the smoke. The grates are moveable on rails; and when the fires are first about to be lighted, they are both brought towards the furnace doors, by which means all the dampers are open; when a clear red heat is obtained, one is pushed backwards to a certain point and one set of dampers only kept open; a fresh supply of fuel, is then supplied to the other fire grate—the unconsumed carbon therefrom, passing under and through the clear fire of the first, is thoroughly decomposed, and the gases produced pass up the chimney. As soon as a bright red heat is obtained in the last fed fire, the same process is repeated with the other set of bars, and the operation has the same effect as before. There have been several modes invented, of passing the unconsumed carbon of one fire over the incandescent fuel of another, but this appears the most ingenious and economical of any of this description of furnace for the consumption of smoke.

The Combination of the Telescope with the Daguerreotype.

To apply the telescope with the Daguerreotype in astronomical observations, has lately occupied the attention of the Royal Society of Bohemia Professor Doppler says, that notwithstanding the extreme susceptibility of the human eye, it is surpassed many thousand times by an iodized silver plate. The physiological researches of Muller and Weber, have shown that the diameter ot one of the pupillæ of the retina, is no more than the 1-8000 of an inch. But comparing the susceptibility of the retina pupillæ with microscopic experiments made with Daguerre's plates, a single globule of mercury only becomes visible by a 800-fold magnifying power microscope, and on the space of a Daguerre plate equal to one retina papillæ, more than 40,000 minute globes of mercury are to be met with. Each of these is capable of producing the image of well defined objects. Thence Prof. Doppler argues that Daguerre's plates are 40,000 times more susceptible for impressions than the human eye. At the exact point, therefore, where the image of a celestial body, is formed before the object lens of a telescope of considerable length, an apparatus is to be placed, where a silver iodized plate can be securely inserted. As the place of the image is the same for all celestial objects, a plate of well defined constant thickness, can be inserted with great accuracy. In this way images of the smallest fixed stars can be obtained, if the light will be sufficient to affect the plates. As these images will have been magnified (through the action of an object-lens say of 110 inches focus length) to the extent of 14 times their natural appearance, and again magnified 1200 fold, the angle of vision under which they are now to be viewed, will have been increased 16,800 fold.

A New Gas.

The scarcity of coal in France, and the consequent high price of gas, has caused many scientific men to turn their attention to the subject of the possibility of obtaining it from substances of a less costly nature than coal, or oil; and we understand that two experienced chemists have taken out patents in France, and other countries, for an invention of a new gas, obtained from the distillation of excremental matter. The apparatus for obtaining this gas, is the common gas retort and furnace, in which the prepared matter is placed, and the gas passes through a small purifier to a gasometer, formed of a wooden curb, surmounted by a zinc cylinder. Previous to being placed in the retort, the matter undergoes a preparation, which separates the urinary portion; after which, it is mixed with other substances, of little value, and made into the consistence of mortar, and in this state the patentees sell it ready for the manufacture of gas, and perfectly inodorous. From comparative experiments with this substance and coal, 240 cubic feet of gas can be obtained from the same weight, as only 172 cubic feet can be obtained from coal and, as the matter, when prepared, can be sold at about 5d. per cwt., the advantages will be greatly in its favor, the light is said to be more powerful and brilliant than coal gas, and the residue from the retorts is represented as a rich manure, particularly for calcareous lands. The liquid matter which condenses in the refrigerator, contains carbonate of ammonia, convertible into sulphate or hydrochlorate of ammonia, both articles of commerce greatly in demand.—*London Paper.*

New Locomotive Arrangement.

A new plan of Locomotive is about to be introduced upon the Reading Railroad. The boiler is intended to be placed upon one set of wheels, and the engine upon another, working free and independent of it, with the connection between engine and boiler formed by means of a copper pipe working flexibly by means of a universal joint. It is intended to be used upon the principal of low pressure, by condensing similar to the plan now most approved upon steamboats.

Stump Pulling Machine.

Wm. W. Willis, of Orange Co. has invented a stump puller that with one yoke of oxen he undertakes to clear an acre per day, provided there are no more than a hundred stumps to be pulled on the acre.

What Next?

A Mr. Trump, of Philadelphia, announces the fact of his having secured a patent for a contrivance designed to *preserve corpses*, so that they may be conveyed any distance by sea or land and no decomposition take place.

Magnetic Telegraph in Turkey.

We learn from the New Haven Palladium that the Sultan of Turkey is anxious to learn the structure and working of the Magnetic Telegraph, and recently some beautiful instruments, with all the apparatus for a telegraph two miles in length, were sent out to him by Professor Silliman, jr. of Yale College.

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NEW YORK, JUNE 5, 1847.

Mechanics Institutes.

Mechanical genius is a test of civilization. Those nations that are most celebrated for civilization at the present day, are also the most signalized for mechanical ingenuity. France, England and America,—and we might instance Prussia too,—tower they not as far above all the rest of the nations of the earth in mechanical genius, as they do in education and learning.

No people have exhibited more mechanical ingenuity, than the Americans, Fitch, Evans, Whitney, Fulton,—how these names illumine the pages of mechanical history. Our mechanics have had to struggle against far greater difficulties, than the mechanics of any other nation ; for in the old countries, practical mechanics have always been a part of scholastic education, and the models of those machines which marked the career and history of invention, were regularly made the subject of lecture. It was in Glasgow College, where Watt first conceived the method of constructing the steam engine, and in that city, the value of mechanical lectures has been so much appreciated by the people, that there are now two of the finest Mechanics Institutions in the world established and in a flourishing condition, just for the benefit of the working mechanics. The result has been, a superiority in the mechanics of that city, above all others in Great Britain.

What we wish to bring before our people, and to impress upon the minds of our mechanics is, that if Mechanics Institutes were eslablished in every town and village in our country, and if model machines were made by our mechanics, that could be taken down and put up with screws and pins, so that they could be explained in all their parts and uses, we venture to say that with the native genius of our people, a developement of inventions more wonderful than any of the past, or ever dreamed of by the poet, would be the speedy result. We scarce believe in impossibilities. Whatever the mind of man can conceive, can be accomplished, and Mechanics Institutes established as we have proposed, with Lectures, Libraries and Museums, (Labaratories,) would soon give us a supremacy above every other nation in the world in civilization. We would stand above them all as high, as England now stands above Russia.

European Mail Arrangement.

Mr. Hobbie, of the Post Office Department, goes out to Bremen in the steam packet Washington this week to perfect a post office arrangement with England and the continental States of France, the Hansetowns, Belgium, Hanover, and the States of the Zollverein, by which letters may henceforth be sent from any town or place in the interior of the United States, and *vice versa*, either by pre-paying the whole postage from the place of departure in Europe to that of its destiny in America, or leaving the whole to be paid by the receiver of the missive.

The East vs. the West.

Unless our railroad to Oregon is quickly constructed, or the right of way through the Isthmus of Tehuantepec secured, both enterprises will become in a measure useless. The Minning Journal has perused a pamphlet, from the pen of Mr. S. B. Rogers, of Nant-y-glo, on the practicability of constructing 10,000 miles of railway through Europe and Asia, and thus connecting London and Paris with Canton and the East India possessions, and all the great cities and provinces on its route. It is a bold idea, far from meriting the ridicule that we have heard heaped upon it. The route proposed is by Paris, Munich, Vienna, Belgrade, and Constantinople ; thence through Syria, Persia, Beloochistan, and Scinde, to Oodipoor, Calcutta, through the Birman Empire, and the north part of Cochin China, to Candon. At Oodipoor, branches might be carried o all parts of Hindostan, not provided for by he present East India Railway Companies.

The First American Ocean Mail Steamer.

This noble vessel, named after the noblest of men, Washington, the first of a class of American steamers, is to commence sailing between New York and Europe this week. She is 230 feet deck, 39 feet beam, 30½ feet hold, and measures 2000 tons burden.—She has three decks fore and aft ; first and second cabins, grand saloon, spar deck and mail room. Her engines are 72 inch cylinders and 10 feet stroke. Her boilers are capable of sustaining the extraordinary pressure of 30 pounds to the square inch. Her machinery was made at the Novely Works, and does great credit to her engineers. Her model is beautiful, she sits on the water as graceful as a swan. Whether it be for the beauty of finish, the strength of material or the arrangement of all her parts, we venture to say that she is the most splendid steamer afloat. On her experimental trip, she attained the wonderful speed of 16 knots an hour. The figure head, is a full length statue of Washington, and when this majestic vessel reaches old England's chalky coast, the people will look upon the star-spangled banner which so often floated victorious where the "Father of his Country" led, and as they gaze upon his image and the noble vessel which bears his name, they will forcibly feel, that he who was First in War, was also First in Peace.

From Rochester Direct to England.

A correspondent of the Rochester Democrat indulges in some rather high strung speculations in regard to the future lake trade. We are not sure, says the editor of the Democrat, but that, if the St. Lawrence be declared free, his anticipations may be realized. In case that measure, which is said to be the favorite scheme of the new Governor General, is effected, Rochester will become the most important point on the lake. Situated in the centre of supplies, and doing the most extensive business in bread stuffs in the world, with a safe and capacious harbor six miles in length, she will soon become the great emporium of traffic on lake Ontario. She has plenty of lumber for ship building, an abundance of material for constructing mills and unlimited water power for propelling machinery. Flouring mills can be constructed on the lower water power at half the cost elsewhere, because any amount of the best kind of stone can be had on the spot. While the upper mills will continue to trade with New York city, as at present, through the Erie canal, the lower ones will do an equally large business with Montreal or with England direct. The river for six miles is deep enough to float ships of the largest class, and there is scarcely a rod from the pier to the landing where vessels might not be perfectly safe at anchor, the banks varying from 20 to 50 feet in height.—One thousand vessels could be moored along the banks of the river, and still have a channel sufficiently wide for two ships to pass.

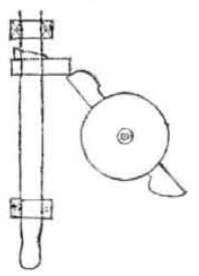
Experiment at Pottsville with Gun Cotton.

The result of a series of experiments in mining with gun cotton is published in the Pottsville papers. No smoke or vitiation of the atmosphere was perceived after any of the experiments, except that which resulted from the squibs used for communicating the fire to the charge. The equivalent of powder would have completely filled the tunnel with smoke. Another important quality of the cotton is that it can be charged into side and upper holes, without the necessity of a covering to enclose it. Two ounces of cotton, equivalent to about twenty ounces of such powder as is used for blasting, can be made into a cartridge six inches in length and 1½ inches in diameter.—While with the same diameter, the powder would occupy about two feet; thus an important economy might be gained by using smaller drills, both in the cost of the instrument, and the time necessary to make the holes and to tamp the charge.

Tremendous Engine.

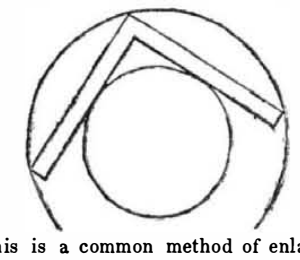
Our readers will remember that in the first part of this volume we gave two drawings of the monster steam engine now in use for draining the great Haarlem Lake in Germany. The Dutch Government have ordered another still larger, and we may judge of its monstrous size when we know that the piston cap alone, weighs *twenty four tons!* It is being made by the Perran Company, Cornwall, England.

MECHANICAL MOVEMENTS.



The above cut illustrates in a very simple manner, the method of moving upright shafts by circular motion. Two tongues are fixed upon the wheel which move the upright stamper twice in one revolution. Upon a revolving shaft moved by a vertical wheel, operated upon by a horizontal wheel, this motion is largely applied in France for moving large heavy knives for cutting madder root. They are lifted up by the cams on the revolving shaft and fall down in rotation. It is also applied, (or we should rather say was, for the circular rollers have nearly superseded them) for lifting stampers for pounding sillicon at pottery and glass manufactories.

Profile Drawing Line.



This is a common method of enlarging a curved line. On the centre circle is represented a rule reposing, but if moved round the centre. it will easily be seen that the curve of the centre is enlarged by the rule with a true exactness in shape to the size of the outward curve, and exactly measured likewise. In the profile drawing of a wheel, this instrument moves with distinct exactness, as it is a faithful representation of a circle moving in a square and communicating its centre form to the outer angle.

Breadstuffs.

A baker of Berne, Switzerland, has succeeded in making very palatable bread from Iceland moss. The result, it is said, of a scientific examination was, that out of 100 parts, it contains 44½ of fecula or nutritive matter. Bread made chiefly of potatoes is said to contain only 14 in the 100 parts of nutritive matter. It is furthermore stated in a foreign publication, that a chemist in Vienna has produced bread from oil cake—the refuse of the colza seed, after extracting the oil—which is both agreeable and nutritive, and costs only one halfpenny per pound. The process is said to be very simple.

New York Methodist Conference.

The Methodist Episcopal Annual Conference, which brought its session to a close in this city since our last, set apart the 3d Friday in June as a day of fasting, in view of the decrease of membership, about 2000 during the year. The Centenary M. E. Church, in Brooklyn, the pastor of which, Rev. John C. Greene, was suspended by the Conference for one year, on a charge of mal-administration in reference to the Rev. J. N. Maffit, have organised themselves into an independent Methodist Church, of which Mr. Greene has accepted a call to be pastor. During the session a very rigid examination was made into ministerial character.

Railroad Transportation.

Among the advantages derived from railroads may be enumerated the carriage of fat sheep and cattle from the country to the London markets. The supply of these markets is annually 150,000 beeves and 1,500.000 sheep, and the saving of loss of weight by carriage, instead of driving, is calculated at 40 lbs. for each bullock, 8lbs. for each sheep, and 20 lbs. for each swine—making an aggregate saving of 29,800,000 lbs weight of animal food in the quantity of animals at present conveyed by railroad.

A newly invented wire buggy is attracting much attention in Cincinnati. The Signal says that it looks in the distance like a cobweb.

Increased Consumption of Coal.

It is ascertained from reliable data that the new line of thirty steamers formed to run between this port and Europe, of which the Washington is the pioneer, will consume, in their outward voyages, the enormous quantity of 113,000 tons of coal per annum,—a quantity sufficient to freight a fleet of 375 vessels of the burthen of 300 tons each, or equal to one-ninth of the quantity brought to tide water on the Reading Railroad the past year, this immense rail road with all its extensive machinery of cars and engines would have full occupation for forty days to bring an amount of coal equal to the supply required for their purposes.

An Immense Sheepfold.

A subscription has been opened in New York to establish a Sheepfold of 120,000 sheep upon an estate of 100,000 acres: in Western Virginia. The gentlemen who wish to form an association, for the purpose, say, that it will require a capital of $150,000, and that the members will receive six per cent, upon the capital from the time of advancing the same ; that the whole capital will be reimbursed during the course of the fifth, sixth, and seventh years ; that they will receive in and after the eighth an annual revenue of $50,000 ; and that they will then be possessed of an establishment of the value of $400,000. Such are the calculations of the projectors

New Factories.

Two India Rubber factories have been put in operation in Massachusetts, one at Salem and the other at Beverley.

The Amoskeag Company at Manchester, N. H. have commenced building another Mill.

A cotton factory is in course of operation in Troup county, Georgia. It is to work 1600 spindles and 20 looms.

The works of the Graniteville Cotton Manufactory at Charleston, S. C. are nearly completed. The capital of the company is $200,000. Another company has been formed at the same place for the purpose of manufacturing cotton yarn, and two other manufacturing companies are about to be formed.

The Famine at Madeira.

The New Bedford Mercury learns by authentic advices from Madeira, that many hundreds of the inhabitants have already perished by starvation. Flour has sold as high as $27 a barrel. The Mercury gives the following extract of a letter from that place: "We have had no potatoes for two years, on account of the potatoe rot. For God's sake send us some Indian corn, or we must all perish. A little Rice will be thankfully received. Oh, that we might have a portion of that which the highly favored Americans throw to their animals, to keep us from the grave."

A Feat in Telegraphing.

The Pittsburgh Gazette gives a statement of an exceedingly delicate operation performed by M. Brooks the telegraphic operator in that city. This consisted in writing out a long message from the sound alone. The writing stile being out of order, it was necessary to remove and repair it, but by the slight "tick" of the magnet every letter was distinguished and every word correctly reported during the whole day.

To New Subscribers.

Those subscribing to the Scientific American will be furnished, if desired, with all the back numbers of the present volume. Bound together at the end of the year, they will form a handsome and valuable work.

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The Oregon Rail Road.

(*Continued from No.* 36.)

It is a work beyond the power of individual enterprise, nor can it be done by States not formed. An entire wilderness, it becomes absolutely necessary to connect the settlement of the country with the building of the road.

I have sought, and believe have matured a plan which shall leave with Congress the power of control, and of holding all as security, making it a national road, while at the same time the work could be carried on as an individual enterprise, freed from the immense government patronage, which, as a government work it would create, and, also, freed from the delays, expenses and insurmountable difficulties sure to arise from constant Legislative changes of direction. I ask Congress to set apart (not grant to me) 60 miles wide of public land from Lake Michigan to the Pacific Ocean, for this especial purpose. I make the starting point from the Lake because, first as the road would add value to the lands; and, as the land is the only source of means, the road must be located where the land on its line could be applicable to it. Land distant from the road could not be made available, and therefore the project would fail.

There are other important reasons why this should be the starting point. It is all important to have a cheap and direct water communication with the Atlantic, while the road is being built, to take laborers, settlers and materials to the starting point; to have easy communication with a settled country around, to furnish food for the laborers and settlers. It is necessary to have timber and other materials convenient; and there is timber on the borders of the Lake, and could be taken on by the road —but from any other starting point on either the Mississippi or Missouri rivers, the difference in cost of transportation for the material alone forbid the commencement of the work. And it is all-important that the starting point should be from where timber can be taken by the road for the settlers, for buildings and fences; for that immense distance of 1,200 miles where there is none, and could not be got except by the road. From the Lake to the Mississippi, somewhere between Milwaukie and Green Bay, nearly the 60 miles wide can be found unoccupied.

From the Mississippi through to the ocean an entire wilderness. From the Lake onward for 800 miles, the land is of the very best quality for the production of breadstuffs, the surface beautiful, without rock or mountain, or even hill, just enough rolling and descending to let the water off, all covered with a rich grass for grazing or harvest, and enough for millions of cattle; no preparation wanted for a crop; the farmer wants but the plough, the seed, the scythe, and the sickle. About 300 miles of this 800, except on the border of the Lake, there is timber only sufficient for agricultural purposes, buildings and fences, the other 500 miles, and so onward to the mountains, entirely without timber, but, as there is an abundance of coal all to the mountain, and timber in the northern part of Wisconsin, it can be taken on by the road at low tolls sufficient for building and fences, to places where there is none, cheaper than the land could be cleared; so that for settlers, particularly those from Europe, with the road, it is better without than with timber, but without, the road can never be settled. After the 800 miles to the pass in the mountains, the land is represented as very poor, but I am inclined to believe the facilities which the road would create must render a part of it productive and useful.

From the Pass to the Ocean, I am disposed, from the information I have been able to procure, to believe there are more lands suitable for culture and grazing than we have inferred from different writers.

It is estimated that the road will be, from the Lake to the Ocean, 2,400 miles; that it will cost for a good road, heavy rail, $20,000 per mile, and except this side of the Missouri, cannot produce any income until all is completed, and must be kept in operation, for its own use, will cost, operations, repairs and all, when completed, $70,000,000—the 2,100 miles, by 60 wide, together 92,160,000 acres, one half of which is considered as worth little or nothing without the road, but it is believed the road will enhance the value so as to produce the sum required. This, then, gentlemen, is the capital stock for this great work, to be brought into life and use by the work itself.

It will be seen that the entire project depends upon the 800 miles of land on the first part of the route, which is fast being taken up by settlers, and will soon be so much so as to defeat the project forever; for I do not believe there can ever be any other means than the lands, and when they are gone all is gone—more than 1200 miles without timber, mostly very poor land, and can never settle without the road to give the only means of communication with civilization and markets.

(*To be continued.*)

The Cold Water Cure.

From one of Mr. Wrights letters from Graeffenberg, Silesia, whither he went to test the value of the cold water treatment for the cure of disease, we take the following description of matters and things at the establishment:—

"Snow lies on the mountains, in the woods, where we walk to get our drink, three or four feet deep; and it snows every day more or less. It is shocking weather just now—very damp, and we really feel more chilly and more horror of the baths and of the wet sheets than we did when the thermometer was at zero. It calls forth all the strength and resolution of my soul to face this terrible water cure. It is most unaccoutable to me of all, that we never take cold here—hardly one ever does. No matter how much exposed to the cold and damp—no matter how thinly clad, or how damp his cloths—no one ever suffers from colds and influenza;—at least none to speak of; and when one does get a little cold, it is all gone in a day or night. Think of the horrid process through which we pass! To throw off all clothes, and stand up and have a dripping wet sheet thrown over your shoulders, and rubbed against your body for three or four minutes—to sit with your feet in cold water an hour at a time—to plunge into cold water down to freezing, when all around the edge of the bath is ice, when the body is all in a perspiration, and smoking with heat and damp—to sit in cold water, with the water all up around one's body, for 15, 20, 30 or 40 minutes—to get out of a warm bed every morning at 4 1-2 or 5 o'clock, and lay one's warm body down flat in a sheet that has been in the snow all night, and then dipped in cold water, and wrung out a little, and then to have that cold wet sheet wrapped about the body so as to have it touch as much of the surface of it as possible, and there lie till you get smoking warm, and then go down into a bath house filled with snow, driven in through the cracks, by a never ceasing tempest, and there, surrounded with snow and ice, throw off the warm blanket and sheet, and set your bare feet down into the ice and snow, and then plunge into the dreadful bath, and again and again and again plunge all over in the water, and then out and up stairs, to flight, with a wet sheet thrown over you—to go under the *Douche*, and there stand 2, 6, or even 10 minutes, and let the water, in a large stream, pour down upon the bare body—and then to wear a wet bandage about the whole body, day and night, and have that bandage wet in cold water 4, 6, or 8 times in a day—to go through all this, with the temperature of the air down to zero and below, and not take cold, is to me most wonderful.—Many of the guests go through *all* these operations every day, and take no cold."

The Education of Idiots.

A Berlin letter in the Providence Journal versifies the reports we have had of the success of this great experiment:

"In the upper part of the building devoted to this institution, is a school for idiots. Here a no less wonderful process is going on, viz: the partial restoration of that intelligence, a spark of which seems to slumber latent in the organization of the most imbecile of our species. Music is one of the means employed in this mental recreation. As I entered the room some of the unfortunate little children were singing, with the accompaniment of the piano, played by their instructor, and appeared to sing with ease and pleasure. One of them exclaimed when an agreeable melody occurred—"ach! das is hubsch," (ah, that is pretty.)—Those in the lowest stage of imbecility, sat rocking themselves in their chairs, with the actions and looks of apes and kangaroos, but all seemed to be more or less attracted by the music. When these children first enter the institution, they are literally animals, not indeed possessing the sagacity or the instinct of the higher irrational creation. They leave the institution, with sufficient intelligence to attend to their own wants and necessities, to deport themselves with decorum, to follow simple occupations and trades, and to find many sources of intellectual happiness which raise them immeasurably above the brutes, and give them a claim to the dignity of human nature. It is said that after a certain period of instruction in this institution, the form of the head changes, the forehead grows more prominent and rounded, and the eyes acquires more meaning and fixedness of expression. The son of a nobleman, who came to the school some years ago, a total imbecile, is now, it is said, almost fit to commence an ordinary education. Of course all cases are not so successful as this: but how benevolent and wonderful a scheme, thus to recover a fellow being to his own rank in the scale of existence, to lift him from his imbruted posture to stand erect like a man, to rouse in his obscure and confused apprehension, new feelings of affection, new ideas of existence, new sources of enjoyment, to make him in fact a creature, not merely of senses, but of ideas. I can conceive of few efforts more directly benevolent, more worthy of admiration and sympathy, more assimilated to the office and work of God. Institutions like these are established in every province of Prussia, and form a part of that grand system of education, which with all its mechanical, constrained, and liberal features, is still perhaps the most perfect which the world has seen, and will in the end gradually effect the political and religious emancipation of Germany."

A Strange Check.

A letter from Stockholm of the 20th ultimo contains the following curious statement:—

When King Gustavus Adolphus was killed at the battle of Lutzen, 1632, the finances of Sweden were in such a deplorable state that the great dignitaries of the Crown guardians of Christina, the King's daughter, (afterward the celebrated Queen,) were obliged to contract debts for her education. An acknowledgement of one of these debts, signed by them, in name of Queen Christina, has just been presented to the Minister of Finance, with a demand for payment. It is for 45,000 crowns, (270,000f.) and was drawn up at Stockholm on the 24th of December, 1636, when Queen Christina was 10 years of age, in favor of a certain James Krieves, a citizen of Lubeck. It stipulates that 20 years after date the Swedish Government should be obliged to pay 45,000 crowns on the first demand, that the debt shall never become void, and that it shall bear 8 per cent. interest. At the foot of the acknowledgment are these words, written in French by Queen Christina, 'Approuvee, Compiegne, 1657; Christina R.'

This curious document has been shown to our Minister of Finance by a banking house at Stockholm acting as the representative of M. Kraght, pastor of the commune of Woldigk, in the Grand Duchy of Mecklenburgh Strelitz.—This person says that he lately found it among his family papers, and he claims to be descended from James Krieves, in whose favor it was signed. He consequently demands from the Government 45,000 crowns, or 270,000 francs in capital, and 4,536,000 francs as interest thereon for 210 years at 8 per cent. Before giving a definite answer with respect to the value of the document the Government has invited M. Kraght to prove his descent from Krieves, and his right to the possession of the paper.

Swedish Children.

Mr. M'Donald, in his travels through Sweden, says: "Young children, from the age of one, to that of eighteen months, are wrapped up in bandages, like cylindrical wicker bashets, which are contrived so as to keep their bodies straight without interfering much with their growth. They are suspended from pegs in the wall, or laid in any convenient part of the room, without much nicety, where they exist in great silence and good humor. I have not heard the cries of a child since I came to Sweden."

TO CORRESPONDENTS.

"E. G. of P."—Mr. Parkers wheel would be interfered with both *above* and *below*. We have heard that there is a vertical water wheel in the course of erection at Waterford, N. Y, of a superior application. Your rotary engine is very simple and beautiful. We shall give it a more thorough examination.

"J. C. of Vt."—Your small printing press exhibits a mind full of ingenuity to take advantage of circumstances and turn them to good account. Your combination of the wheel, lever and inclined plane gives a wonderful pressure, but for light quick work, the pressure is not much of an object except for embossing presses.

"L. B. of Mass" Is informed that we can furnish him with a cut of his magnetic truss, for about three dollars. The invention appears to be original.

"S & M. W. A. of Ala."—The objections to Hotchkiss' vertical wheel have been mentioned to us before. Your improvement appears to obviate the difficulty, yet you are well aware that it is only by fair experiment this can be tested. We should like you to get a cut of it, which can be furnished for about five dollars and let its merits be made public. By this means the original right to a patent is secured.

"S. H. of Mass."—Your letter came correct. The information you desire regarding the most economical bridge for a small stream, can only be answered by a knowledge of a permanent, or one to last only for a short time being required. The cheapest but least durable, is made by simply laying heavy beams across the span, resting on abutments of solid wood work, and planking the crossing by spiking down a double tier of hemlock planks, 2 or 3 inches in thickness. The seams should be filled with pitch which would in a great measure cheaply supply the place of roofing. We shall comment somewhat in a future number, of improvments in Bridge Building.

"E. B. of Mass."—Your Soda Fountain will operate well. It is upon the well known principles of Hydrostatics. The cistern is extraneous, as the water discharged depends upon the pressure above entirely. A stream can be forced through a pipe to the height of the fountain head. The size of pipe &c. is immaterial.

"J. T. S. of A."—The specification with the drawing of an invention published in a periodical, gives the title right to a patent. A model is necessary to obtain a patent.

"O. M. B. of Mass."—We shall endeavor to give you the required information soon.

"A. A. of M."—The cost of an engraving will be $4, provided you furnish the drawing. We have not published any cuts of rock boring machines.

"C. W. of Ct."—The Miral circle is an astronomical instrument, generally of large size attached to a stone wall or pier of solid masonry, and fixed in the meridian for the purpose of measuring the distances of stars from the pole or zenith. J. Troughton's circle was 6 feet in diameter, made of brass. The degrees were cut into five spaces, on a narrow ring of white metal composed of gold and palladiume

"M. C. of Me."—You have been at some trouble. We will send the account as soon as received from Washington.

"E. G. of N. H."—Your plan of propulsion is about as good as any, but we fear will never be adopted. After all, the old way of having side paddles is the best. If the new steamship Washington, which sailed on the 1st inst on her trial voyage, succeeds as well as anticipated, we think propellers will be forever abandoned for ocean vessels.

"W. W. of E."—You are entirely mistaken. In gunnery if there was no resistance from the atmosphere the greatest range would be when the piece was elevated at an angle of 45 degs. But in a resisting medium the horizontal range requires to be less than 45 degrees. It is found by experience that with the ordinary velocity a cannon shot ranges the farthest when the elevation of the piece is about 30 degrees.

"J. A. of Pa."—The movement in your instrument is rather complicated and withall defective. When the tooth has passed the clamp of the pallet it must fall upon the roller and there remain until the returning motion

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brings the notch to the point of the tooth. A little more time spent upon it will be a great advantage.

"J. A. W. of P."—The printing press described in your circular exceeds any thing we ever dreamed of. If it possesses such extraordinary advantages, why is it not already in general use? We shall be most happy to do you the justice you desire if you will send the date of your invention.

"E. M. of M. D."—The best advice we can give is to first publish a drawing and description in this paper. You need have no fear that any one will obtain a patent before you.

"E. L. of N. J."—You must send us more full explanations and a side view, before we can insert anything.

"B. J. of N. Y."—The difficulty is very apparent. You must construct a wheel with one cog less in it, and shorten the connecting lever until it touches the lowest journal.

"C. L. of Mass."—Such an engraving will cost $5.

"Mechanic."—Almost such an instrument is now in use called the Plumb and Level Indicator. They may be had at this office, price $1—much cheaper than yours, you will perceive.

"L. O. of Vt."—Your contrivance cannot fairly be called a lock. It is rather ingenious but will hardly be of any service. We should be glad to publish a drawing for the sake of the curiosity. Suppose you send a sketch. In regard to locks, the principal on which they all depend, is the application of a lever, that is the key, to an interior bolt by means of communication from without; and the security of locks depends upon the impediments which may be interposed between this lever and the bolt.

"L. L. of Mass."—Your invention pleases us very much. We should be glad to make some arrangement with you for bringing it into general use. We are possessed with more than common advantages for the introduction of inventions, and feel confident we could realize a handsome profit for you, as well as pay ourselves for the trouble.

"A. C. of Y."—Your communication will appear very soon

☞In consequence of the frequent mis-direction of letters addressed to this office i. e., in often directing to the Editor, letters that pertain to the business of the Publishers, and vice versa, we are induced, in order to remedy the difficulty, to request our worthy correspondents to address all their communications hereafter to the publishers, whether they be upon business of the office, or soliciting or imparting information upon scientific or mechanical subjects.

Ranlett's Architect.

The May number of this superb work has been laid upon our table, and could we find words of utterance to define its merits more fully than we have previously done of its former numbers, we should say it is the best number out. Every house carpenter or designer should procure a complete set of this work, and preserve it as an invaluable text book.—W. H. Graham, publisher, corner Spruce and Nassau sts. Price, 50 cents per number.

The Columbian Magazine.

The June number is received in good season and is a superb one. The "Indian Maiden's Reply," a first rate mezzotinto by Sadd, and the panoramic view of the lower harbor of New York, spangled with vessels under sail, on steel by J. White, and a fine plate of Parisian Fashions, with the music of the "Lover's Song," offer strong inducements to every body to call for the number at Ormsby & Hackets, 116 Fulton st.

Teeth—their Structure, Diseases, &c.

This is a neat little book published by Fowler & Wells, 131 Nassau street, and to those who are desirous of knowledge in regard to the preservation of their teeth—the condition of which so materially effects our health—we recommend this book as a faithful monitor.—Its author is John Burdell, Dentist. It is illustrated by numerous engravings.

Superb Hats.

Our neighbor Knox, of 128 Fulton St., keeps the best assortment of hats and caps, and sells for a less price than any other establishment, with which we are acquainted in the city.—We would invite the hat wearing community to examine his assortment of summer styles which he has just opened, and which cannot be surpassed in beauty and cheapness at any other establishment in the city.

Call and see him, only one door from this Office.

Smith's Magnetic Machines.

We would call the attention of our readers to the advertisement of the above machines in in another column, and would add that we have been shown a long list of certificates from those that have used them for the various maladies mentioned in the advertisement, and that without exception they have all expressed perfect satisfaction as to their efficacy in curing diseases. They may be had at this office. Price $12.

FIRST VOLUME.

We would inform those who have been disappointed in procuring the whole of the first volume of the Scientific American, that we have recently come into possession of a few complete sets of the last half, (i. e. from Nos. 26 to 52 inclusive) which we will dispose of at the subscription price, viz. $1 per set.

ADVERTISEMENTS.

☞ This paper circulates in every State in the Union, and is seen principally by mechanics and manufacturers. Hence it may be considered the best medium of advertising, for those who import or manufacture machinery, mechanics tools, or such wares and materials as are generally used by those classes. The few advertisements in this paper are regarded with much more attention than those in closely printed dailies.

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PROSPECTUS FOR THE SEVENTH VOLUME OF

The New York Organ.

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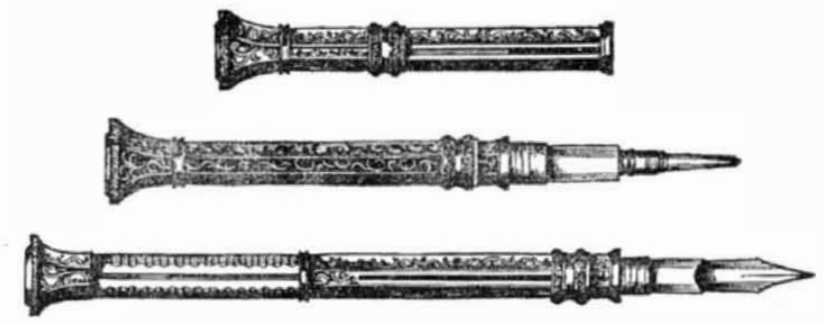

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THOMAS DADE.

State of New York, City of New York, SS.—On the 16th day of February, A. D. 1847, appeared before me Doctor S. B. Smith, who being by me duly sworn, did depose and say that the following certificates and extracts from letters are each and every one of them true as received from the several persons whose names are thereunto attached, and that the same are a portion of the many testimonies of the cures by his Magnetic Machine.

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Superintendant of Portsmouth, N. H.
d12 6m* Steam Mills.

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Mechanical Engineer and Agent for procuring Patents.

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He has the honor of referring, by permission, to Hon. Edmund Burke, Com. of Patents; Hon. H. L Ellsworth, late do; H. Knowles, Machinist, Patent Office; Judge Cranch, Washington, D. C.; Hon. R. Choate, Mass., U. S. Senate; Hon. W. Allen, Ohio, do; Hon. J. B. Bowlin, M. C. Missouri, Hon. Willis Hall, New York; Hon. Robert Smith, M. C. Illinois; Hon. S. Breese, U. S. Senate; Hon. J. H. Relfe, M. C. Missouri; Capt. H. M. Shreve, Missouri. j23

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To Emboss Letters or Figures on Marble.

Take some rosin varnish, and with a hair pencil, draw the letters, &c., on the marble, (which should be previously well polished,) and also cover with the varnish every part of the face of the marble that is to remain plain. Lay the marble in a horizontal position, and make a border of oil putty round it, and then pour muriatic acid to the depth of half an inch on the marble. When ebullition ceases the acid may be drained off, and the work examined; and if the letters are not sufficiently prominent, a fresh quantity of the acid may be added. When the work has been thus corroded to the depth required, the varnish may be washed off with spirits of turpentine. The acid that has been thus employed need not be lost, for a muriate of lime being thus formed, may be crystalized by a slight evaporation, and preserved for other purposes; or by the addition of a small quantity of sulphuric acid a sulphate of lime is precipitated, and the muriate may be poured off and be used again for the same or a similar purpose.

To Make the best Copal Varnish.

Take one pound of gum copal, and melt it in a flask over a brisk fire of charcoal; at the same time, in another flask, boil or heat to the point of boiling, one pint of linseed oil; as soon as the gum is melted, take it from the fire, and add the hot oil in small quantities, at the same time stirring or shaking it till they are thoroughly incorporated. Allow the mixture to cool below the boiling point of water, and then add nearly a quart of spirits of turpentine; cork the flask slightly, and expose it for a few days to the rays of the sun, which will make it work more smooth and shining. If a larger quantity is to be made, a copper boiler that is small at the top, will answer to melt the gum in. For ordinary or coarse work a larger proportion of oil and a little rosin may be added. If oil is used, in which red lead and litharge (in the proportion of half a pound of each to a gallon of oil) have been previously boiled, the varnish will be the sooner dry.

To make a delicate Picture Varnish.

Take two ounces of gum mastic and one ounce of gum sandarach, pulverise them to a powder, put them in a flask or glass bottle and add a pint of alcohol: shake the whole together till the gums are well mixed with the liquor, and set it in a warm place to dissolve. When the gums have dissolved, strain the solution through a fine flannel, and put it in a clean bottle, corked tight, till wanted for use. This varnish may be applied to pictures, boxes, or other fancy articles, and will dry in one minute, and produce a beautiful water-proof gloss. When maps or pictures on paper are to be varnished, they must first be sized with a solution of gum-arabic in water, to prevent penetration by the varnish; and if the weather is cold, the article must be warmed prior to the application of the varnish.

To Make Phosphuretted Hydrogen Gas, which burns under water.

Take about a tea-spoonful of clear zinc filings. Put them into a wine glass, with eight or ten small bits of phosphorous; nearly fill the wine glass with water: then, by means of a dropping tube, convey some oil of vitriol to the zinc, which will by and by begin to be dissolved. During this solution, water is decomposed; its oxygen unites to the zinc, and its hydrogen dissolves the phosphorous, and rises in the form of phosphuretted hydrogen. In making experiments with phosphorous, take care to cut it while immersed under water in a saucer, with wet fingers. Cut it slowly and cautiously, for it is apt to fly about and be lost. It will inflame quickly at from 809 to 908 of Fahrenheit, and if, while inflamed, it comes in contact with the skin, it makes a very deep and painful sore. Never, therefore, trust your dry fingers to press it; for the warmth of the skin soon inflames it.

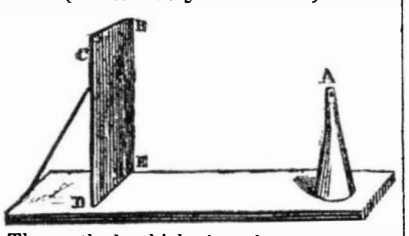
Type Metal.

The proportions used in making type metal are 2 parts of antimony to 10 parts of lead.—Antimony renders the lead hard and brittle.

THE ART OF PAINTING.

LANDSCAPE PAINTING.

(*Continued from No.* 36.)



The method, which gives the most perfect perspective, however, is that of sketching on plate glass. For this purpose, a small conical post A, having a horizontal orifice through the head thereof, is placed on a board or table, and a square piece of plate glass, B C D E, having been prepared by a very thin coat of dilute copal varnish on one side, is placed and secured in a vertical position, at a convenient distance from the post. This glass being placed in the direction of the object to be drawn, the learner may bring his eye to the orifice, and trace with a lead pencil on the varnished side of the glass, the outlines of the objects as they appear. He may afterward place the glass in a horizontal position on a sheet of white paper, and lay a piece of transparent paper on the glass, and again trace the outlines on the transparent paper. When this is done, he may take a sheet of thin white paper, and rub one side of it with blacklead or dry red ochre, and place it with the colored side down on the board or ground that is to receive the picture; and upon this paper place the transparent paper on which the tracings are made. Then by re-tracing the outlines with a pointed piece of hard wood, the lines will be conspicuously transferred to the prepared ground. This process may appear rather tedious, but by the practice thereof, the learner may acquire more knowledge, and make more proficiency in the art of perspective drawing in an hour than, than in three days practice of the geometrical system. The learner should accustom himself to measuring distances and proportions by the eye alone, however, without depending on any other apparatus than a pencil In designing landscape pictures, the learner will find an advantage in first making his sketches on paper, shading the objects boldly with an extra black lead pencil, rubbing out and correcting as occasion may require, till he has arranged the objects to his taste. It not unfrequently occurs in this branch, that some near and prominent object is required to be drawn first, and the picture filled up with distances and grounds afterward, with minor subjects so arranged as to show the first to the best advantage: but in the painting process the distances are first painted, and the most prominent are finished afterward The heightening of objects with delicate touches of very light colors, usually constitutes the finishing process of landscape painting in oil colors, but in painting with water colors on paper, the order is in some measure reversed. In this branch, the artist depends on the transparency of the colors, seldom uses white, or very light opaque colors, but proceeds on the principle of transparent painting, and applies a less quantity of paint where the lightest colors are required, and leaves the white ground uncolored, where white is required, instead of using white paint. On this account the process of landscape painting on paper with the ordinary drawing colors, is slow and laborious, as all the lights must be preserved, and cut round by darker colors on deeper shades.—And as no light object can be painted on a colored ground, it is indispensible to paint the nearest objects first, and represent the distances afterward, cautiously avoiding the extension of any color beyond its proper limits.—But the colors which are used in scene painting, or landscape painting on walls of rooms, are even more perfectly opaque than oil colors; and the art of applying them, which we shall describe at length in future numbers, is more attractive and interesting, and more generally useful than any other branch, usually considered under the head of *fancy painting*.

ORNAMENTAL PAINTING.

We have already given instructions in several branches which might be considered under this head, such as bronzing, striping, and landscape painting. But what is more strictly understood by the art of ornamental painting, is that of painting pictures on signs, carriages, and banners. The colors used in this branch, are, in general, prepared the same as described for landscape painting, being ground in the purest boiled linseed oil, tempered with a due proportion of drying japan, or white vitriol, as occasion may require, for drying, and diluted with spirits of turpentine. In painting banners, the silk for that purpose must be drawn very straight on a frame, and the part or portion thereof that is to receive the painting, must be carefully and delicately sized with thin paste made of four parts of wheat flour, with one part of ising-glass and one of white bar soap. If the silk is to be painted on both sides, the ornament should be so arranged as to occupy the same space on each side; though this rule is not always observed. A very thin ground-coat of white, may be laid on the sized part, and on this, the outlines of the picture may be drawn. The artist should calculate what particular colors are to be applied to each particular part of the ground, and apply each color to its place, so as to avoid loading any part with several successive coats in producing the desired shade and color.—The practitioner should be provided with a good variety of small brushes and sable hair pencils, round and flat, for applying the different colors: when two or more colors are to be blended on the work, they must be applied with different tools, and blended with a third,—a small flat sable pencil: and with a pencil of this kind, the surface of each coat and color may be smoothed, after having been applied by a stiff hair brush or pencil. This rule should be observed also, in painting ornaments on carriages and fancy sleighs, or furniture; but in painting fancy signs, it is of little consequence whether the surface is smooth or how thick a body of paint may be laid on the work. If the tinting of a human face, or of flowers, or drapery, is required to be varied after the paint is too firmly set to admit of blending, it may be effected by applying, with a short flat sable pencil, a thin or partial coat of a deeper color than is required, but so graduated as to work semi-transparently, and improve the original color of the work. Such parts as are to be gilt or silvered, are to be sized and managed in the manner described in former numbers, under the head of sign painting, carriage painting, &c., the gold or silver being occasionally shaded with transparent colors. This work must be protected with a delicate coat of pure copal varnish, except the gold lettering on signs, which is generally allowed to retain its native brilliancy without varnish.

(*To be continued.*)

Milk Paint.

A foreign correspondent of one of our exchange papers, says that a paint has been used on the Continent with success, made from milk and lime, that dries quicker than oil paint, and has no smell. It is made in the following manner: Take fresh curds, and bruise the lumps on a stone, or in an earthen pan or mortar, with a spatula or strong spoon. Then put them into a pot with an equal quantity of lime, well slacked with water, to make it just thick enough to be kneaded. Stir this mixture without adding more water, and a white colored fluid will soon be obtained, which will serve as paint. It may be laid on with a brush with as much ease as varnish, and it dries very speedily. It must, however, be used the same day it is made, for if kept till next day, it will be too thick: consequently no more must be mixed up at one time than can be laid on in a day. If different colors are required, any of the ochres, as yellow or red ochre, or umber may be mixed with it in any proportion. Prussian blue would be changed by the lime. Two coats of this paint will be sufficient, and when quite dry it may be polished with a piece of woolen cloth, or similar substance, and it will become as bright as varnish. It will only do for inside work; but it will last longer if varnished over with the white of an egg.

Imitation of Silver.

Copper melted with tin, (about three quarters of an ounce of tin to a pound of copper,) will make a pale bell metal which will roll and ring very much like sterling silver.

Warner's Long Range.

The British Government commissioners appointed to witness the experiments have delivered their report, from which it would appear that the "long range" of Captain Warner is effected by means of air *balloons*, from which shells, or other destructive missiles are dropped. The experiments at Carrnock Chase, the property of Lord Anglesey, in Staffordshire, were a failure. The tree selected for destruction was unstruck, and the balloon alighted at a great distance from it, to the great alarm of the peasantry, with powder and nine shot attached to it. It was handed over by the terrified finder to the police Lord Anglesey's head gamekeeper found 18 shots, five within 100 yards of where the balloon fell, eight at about three miles from Haywood park, and five one mile from where the balloon started. The penetration was from one to four feet, in hard gravelly soil.

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